Industrial Finishing

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Devoted to Product Finishing in the Factory

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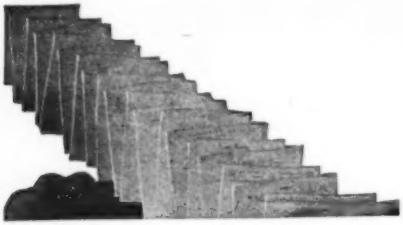

Letters—— from I. F. Readers

Pearl Essence Methods

We are interested in obtaining information descriptive of methods and material used in applying pearl essence finish to sheet metal. If you know of any manufacturer of this material to whom you could refer us, we would appreciate it.—L. Companies (Manufacturers).

Air-Dry Metal Finishes

We have taken on a line of metal goods and would like to have the names of manufacturers specializing in air-dry finishes for metal.—A. Wood Products Co.

Rust Preventative Finish

No. 1—In the May issue of INDUSTRIAL FINISHING, page 5, we note a manufacturing company wanting a rust preventative.

In equipping citrus packing house and canning machinery in Florida, we use steel tanks 2-ft. deep, 4 to 6-ft. wide and 15 to 30-ft. long. These tanks are subject to soda wash, or a chemical cleanser, and borax. The temperature in these tanks is controlled at 110°F. maximum. We have found only one or two grades of paint that will withstand this mixture and temperature.

If the replies to the above request are favorable to our requirements, we would appreciate your advising us of the manufacturers so that we may get in touch with them as to rust preventative in our tanks.—G. D. N. Co. (Fruit & Vegetable Canning and Packing Equipment.)

No. 2—On page 5 of your May issue is an inquiry from the X. F. Co. (Electrical Supplies) regarding rust preventative. We have had very great success in processing iron and steel articles for the prevention of rust and for a base for any subsequent finish. We would appreciate it if you would let us know the name of this company so that we could write them.—Parker Rust Proof Co.

The names and addresses of those whose letters and inquiries appear in this department may be had by writing this office, or letters addressed to them in care of this office will be forwarded promptly.—The Editor

Stain for Gum

In the May issue of your magazine, the writer noticed on the upper left hand corner of page 22, reference to an inexpensive stain for gum mouldings and in parentheses "Name on Request."

Will you be good enough to send, to the attention of the writer, the name of the manufacturer of the formula that you refer to?—F. Box & Lbr. Co. (Wood Products).

Sprayed Lead

On page six of the May issue of INDUSTRIAL FINISHING there is an article on the subject of "Sprayed Lead, a Silencer." Will you please give us the address of the home office of the Metal Coating Co. of America?— K. Mfg. Co. (Metal Products).

Graining by Airbrush?

Would you be able to give us complete information or refer us to anyone who could tell us something about

the process of applying imitation grained finishes to steel with the use of an airbrush? It seems as though some finisher of materials is putting out a line of products similar to our storage and wardrobe cabinets having a finish that approximates mahogany, walnut and oak grain. Their work seems to have been done with an airbrush and not with graining tools or plates by the roller process. Any information you could send us on this would be appreciated very highly.—E. T. M. Co. (Steel Cabinets).

"Build-up" Plastic

Do you know of any material similar to "rough stuff" which can be sanded easier but which has good adhesion and filling qualities? I want to use this material to build up a smooth surface on papier mache forms. At present I am using M——, but it is necessary to apply this in too many coats, and it is unsatisfactory in other ways. Anything you can suggest will be appreciated.—P. I. T. (Wax Figures & Display Forms.)

Cheap Guns Wanted

Referring to the letter entitled "Cheap Cup Guns," on page 3 of the April issue of your magazine, if you happen to unearth a source of satisfactory equipment such as that described, we would appreciate your also advising us as to where they might be obtained.— T. K. Table Co. (Tables for the Home and Office.)

Brine Tank Paint

In May issue, under the above title, (page 31) we notice a letter from one of your readers asking for information regarding suitable paint for use on the inside of a metal tank, such as is used in water softeners, to keep the metal or steel from rusting. We are interested in this information also, and would appreciate it if you would give us this information when you give it to the other party. —K. Products Co. (Wholesale Mfrs.)

Moisture-Proof Finish

This is in reference to torched enamel in your article on finishing as applied to "Brewery Trucks and Brewery Equipment" in April INDUSTRIAL FINISHING (pages 24, 25, 26).

We have in mind a definite use for a material which can be applied to

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Division of Continental Steel Corporation

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wood which will keep the wood from absorbing any moisture and maintaining a smooth hard finish. We would like to know whether any of the Cleveland manufacturers furnish a material of this sort. We will appreciate any information that you can give us.—C. N. N. Co. (Enamelers and Wood Turners.)

Polished Metal Lacquer

In your May issue under the above title (pages 6 and 31), you quote letter from one of your readers, requesting data on a clear lacquer for use on polished metal exteriors, to deliver a minimum service of one year without break-down. Our company has a new synthetic clear lacquer capable of remarkable exterior exposure which we would like to discuss with the inquirer.—Q. R. H. Co. (Finishing Materials.)

"Durako" Discovered

No. 1—In the May issue of INDUSTRIAL FINISHING appears an article signed by the N. T. Mfg. Co., headed "Who Makes Durako?" (page 4). We shall be very much interested in obtaining the name of this concern, as we are one of the principal distributors for this material, and are directly responsible for having this finish written into the University of Texas specifications. We have been doing considerable furnishing of their new buildings, and will be very glad to furnish this manufacturer with complete information.—Stickley Bros. Co. (Quaint Furniture.)

In a recent issue of your publication INDUSTRIAL FINISHING there is printed a request for information, in the Letters-from-Readers column, signed The N. T. Mfg. Co., Texas, regarding the manufacturers of "Durako." Being the southwestern distributor of Durako, I am enclosing a pamphlet describing the product and an envelope stamped to enable you to forward the circular to your reader and I would thank you to see to it that he gets it.—Phil A. Becker.

Editor's Note: "Durako" is a product of the Preserve Surface Co., Detroit, Mich.

A Striping Job

I wish to inquire whether you can give me information on the application of ½-in. stripes on the shell of a hot water heater (17-in. in diameter, 5-ft. high) of which we have a large

(Continued on page 45)

How to Make and How to Use - - -

Airbrush Stencils

by Harry L. Hill

THE JAPANESE method of airbrush tinting and stenciling, if not the first, is one of the oldest and perhaps the best. There is no safer nor surer way of getting the desired stencil result with the airbrush.

Soft or sharp lines are easily produced. It all depends upon the operator. Designs in sharp relief, with beautifully blended backgrounds, can be obtained. With the right kind of an airbrush and proper adjustment of the fluid tip or nozzle, and the fluid of required consistency, one can almost equal half-tone reproductions in color.

Recently I saw some designs, executed in Australia, that were of exceptional merit. The subjects included combinations of birds and flowers. They were of Japanese idea, that is not too strong in detail. Soft highlights and shading, done in three colors and by superimposing a six-color effect, were quickly and neatly produced. The design would be suitable for use on novelty furniture, wallpaper, velvet or satin.

There is nothing difficult about making these stencils, and they are not expensive.

1) First draw the design on a good grade of tracing paper. Be sure the lines in drawing are strong and sharp. When the drawing is complete, turn the paper over and airbrush two or three thin coats of a good grade of orange shellac.

2) Now take another piece of the same kind of tracing paper the size of the first piece and coat one side with two or three thin coats of the same shellac.

Be doubly sure that each coat of shellac is dry before applying the succeeding one.

The reason for emphasizing thin coats when spraying shellac is that when shellac is sprayed in heavy body it does not flow out smoothly. The shellac must be in heavy deposit on the paper.

Naturally, when the first coat is applied, the paper will absorb some of the alcohol in the shellac, and some alcohol will naturally evaporate, thus leaving the first application quite brittle.

The second application should be sprayed on quite heavily, but not heavy enough for the deposit to show too much of an orange peel effect. Apply as heavy as possible and still have a smooth deposit. This goes for both pieces of tracing paper.

When applying the second application of shellac don't thicken the shellac. Keep it thin; just spray a heavier deposit. A very small amount of castor oil can be

added to the shellac in the first application to make it flexible.

3) Now when paper is all prepared, take a piece of ¼ or 5/16-in. mesh silk netting. Bolting cloth can be used, and is the best for this purpose. Stretch the netting on a good firm frame.

4) After the silk is stretched on its frame, take a piece of not less than ¼-in. thick felt a little larger than the shellaced paper. If the paper is 24x36-in., the felt should be not less than 26x38-in.

5) Lay the felt out smooth on a flat level surface; place the piece of paper not having the design, shellac side up, on the felt.

6) Place the stretched silk on top of the shellaced paper, and set the frame with temporary fasteners or weights so it can't slide out of position.

7) Place the designed piece of paper, shellac side down, design side up, directly over the first sheet of paper. Fasten papers at corners to the level surface with brass round-head tacks (temporarily), the tacks to penetrate felt into surface on which work is being done.

You are now ready to make the stencil.

8) Perforate the entire design with a perforating instrument.

9) Pick out the parts not wanted in the design with a pin or needle.

10) Lay a piece of newspaper over the stencil and with a warm iron, press the two sheets together, the silk in between.

12) Remove brass head tacks, turn frame over, and remove parts not wanted from the bottom side of the stencil and throw them away. The iron used in this first pressing operation should be just warm enough to give the shellac a slight tack so as to hold the bottom piece of paper in place when turning the stencil over. If the iron is too warm, the undesirable portions will be hard to remove.

13) After removing all the excess pieces of paper, turn frame over, silk side down, on three or four pieces of blotting paper. Place a piece of newspaper over the stencil and with a hotter iron press the stencil so the shellac will soften and grip the silk well.

14) The stencil is now ready for use. To insure durability in use as well as in cleaning for future use, the stencil can be coated on one side with a spray of lacquer, shellac, or glue, all depending on what one is going to use in spraying the design.

After the protective coating is dry on the first side sprayed, coat the opposite side in like manner.

Reinforce with glue where using lacquer or oil colors.

If work is to be done in lacquer colors, by all means reinforce with glue, as lacquer has a tendency to dissolve shellac.

If spraying in water color, use lacquer to reinforce. If alcohol-soluble dyes are used in spraying, reinforce with glue or gelatin, and be careful not to use a glue solvent when cleaning up.

Just a word in handling the stencil and airbrush:

By elevating the stencil from ⅛ to ¼-in. from the surface to be sprayed, and spraying thin material at about 30 to 40-lbs. pressure, one can get wonderfully soft and blended lines in the design.

By setting the stencil at perfect contact to the surface and using heavier colors at low pressure, one gets sharp lines just as they appear in the design.

Sometimes it is desirable to show the mesh in the netting. This can easily be accomplished by spraying a number of heavy coats of

shellac, lacquer, or glue on the mesh of the silk. This treatment has a tendency to make the threads in the mesh much coarser and protect the surface from the spray of color.

Grain Reproduction

AN IMPORTANT part of the finishing process in some manufacturing establishments is a reproduction on plain metal, wood or composition surfaces, of the color, grain and figure of expensive hardwoods, marble or inlay. Reproductions of this kind, if expertly done, almost defy detection. To the naked eye they appear equal in appearance to the genuine article. Much of the metal furniture and many of the metal interiors of passenger elevators are finished in reproductions of mahogany, walnut or other beautiful hardwoods; also, metal fixtures for stores, offices and banks, and the interior metal trim for fine buildings.

Preceding graining, the metal surface is thoroughly cleaned, as it would be in preparation for any other type of finish, and then what is called a ground color coat is applied. This ground color may be put on over a surfacer or priming coat, or it may be so formulated that it will perform double duty, serving both as a primer and ground color coat—depending upon the quality of finish desired and the cost permissible. In any event it must be carefully selected for adhesion, hiding power, true color of the wood being imitated (if a wood finish is being reproduced), its flatness or dull sheen, its "ability to take" the graining ink, and to stand up properly under subsequent finishes to follow. The ground color coat may be an air-drying or a bake finish material.

After the ground coat is dry the surface is usually given a mild sanding with the very fine abrasive paper. Following a final cleaning after the preceding operation, the surface is ready for what is called the graining color or graining ink. Since there are several different methods and processes involved in skillful hand graining (enough to make a separate article in itself) this subject will not be included in the present article.

The mechanical equipment and methods used for reproducing wood grain, marble figure, etc., are not alike, and to describe all of them in detail would make a very long article. We will therefore dispense with any discussion of the rollers which carry permanently on their surfaces the desired figure imprint, and take up the method of reproduction wherein an etched plate and smooth composition roller are used. For wood grain and figure reproduction, the etched plate may be a prepared panel of the real wood, with the surface properly etched, or what is more permanent and more generally used an etched copper plate. The copper plate is produced from a photograph of the wood to be imitated, and gives a true reproduction.

The graining paste, thinned to suitable working consistency, is applied to the etched face of the block with a sort of squeegee scraper in such a manner that ink is wiped clean from the high places and retained only in the low places. Then a smooth, soft composition roller is carefully rolled over the inked plate—the operator being careful to see that it makes no more than one revolution—to pick up the ink impression. In typical small installations this roller is usually handled by two men, one at each end of the spindle. With the ink picked up and imprinted on the soft smooth surface of the roller, the men transfer the roller to the prepared surface to be grained and carefully roll it over the ground color surface. The graining ink may be an air-drying or a bake finishing material.

With the aid of thin stencils it is possible to apply other decorative effects by this same method, making what appear to be inlays or overlays.

One or more clear finishing coats of varnish (air-drying or bake finishing) or lacquer are applied to the grained surface, after which the final finish may be left as it is or rubbed in the usual way to a dull sheen.

Color Schemes for Autos

by Howard Ketcham
Director, Duco Color Advisory Service

THE FOLLOWING color schemes, all of which can be economically applied by refinishers, give the trends in the newest color treatment for automobiles, as prepared by the Duco Color Advisory Service. Old cars refinished along these lines will have a color treatment in accordance with this year's models.

The suggestions cover two types of cars—one, the usual five passenger family car; the other, the sports model. These color plans are in one allover color, as this is characteristic of the smartest models this year.

For the 5-Passenger Sedan

PLAN No. 1 is allover color deep blue. Its richness can be intensified by using the complement of purple blue, some high value pure yellow color, for a stripe accent. A blue with considerable rich purple content, low in value, and remarkably clear and pure in appearance should be chosen. Such a color ranks extremely high in fashion importance as an automobile color at this season. It is characterized as dignified, impressive and yet in keeping with the spirit of the trend to purer, livelier colors.

PLAN No. 2. Allover color a dark maroon. Metallic colors, such as gold and aluminum bronze, make ideal stripe accents for use with this type of maroon. It is a full, clear, rich color without apparent yellowish or bluish undertones. The regal splendor of this shade makes it most desirable for use on town car or sedan models.

PLAN No. 3. Allover color a light maroon. The character of such a maroon can be improved through the use of light, bright blue green as a striping accent. Maroon is in reality a low value of red. Blue green is the complement of red. The use of a color with its complement tends to intensify both colors.

PLAN No. 4. Allover color gray. A bright, rich yellow stripe makes an exceedingly good-looking finishing touch with gray and is recommended as first choice. A neutral gray is one without hue characteristic and makes a conservative closed car finish. Because neutral gray will combine with any hue attractively, an ex-

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tremely wide range of suitable accent colors for striping is available. Gray is smart and distinctive. There are relatively few low-priced cars in neutral gray. A neutral gray is a fortunate car color, for such a finish serves as an equally effective foil for any color dress ensemble.

PLAN No. 5. Allover color light green. It can be attractively embellished with fine stripes of scarlet. This type of green is a very pure, striking color of low chroma. It is a green with a considerable blue content and is one of the two which are outstanding in current favor. The other is a dark green.

PLAN No. 6. Allover color dark green. A bright orange will make a good-looking stripe complement. This dark green is a more appropriate color for the very large closed car, as light color finishes have a tendency to make large objects appear larger.

For the Sport Cars

These take livelier colors. In recent years there has been a notable departure from the yellow or cream roadster so much in prominence a few years ago.

PLAN No. 1. Allover color beige. Stripe and wire wheels in vermilion. Beige makes a particularly attractive color arrangement for the small car because this color is sufficiently light and bright to make a car finished in it appear larger.

Sport cars look most up-to-date with chromium disc wheels. A 3-in. wide band in the stripe color will make a distinctive finishing touch. Aluminum lacquer will give a very practical semblance of chromium when applied to a set of disc wheels. A coat of clear lacquer on top of the aluminum will help complete the illusion.

PLAN No. 2. Allover color red. An aluminum finish trim is effective, for the reason that a cold color with a warm color engenders great contrast. Red is a daring, racy-looking color for a speedster.

PLAN No. 3. Allover color medium blue. This makes a somewhat conservative and yet appropriate color for the convertible type car. Long a favorite color, this shade is still as acceptable as ever. A yellow teal cloth will make an ideal top material as yellow serves to enhance its appearance.

PLAN No. 4. Allover color gray. Bright blue or yellow will be peculiarly suitable as a stripe medium. Light, yellowish gray is a good practical sport car color. The dust-concealing virtue of this color finish will appeal to those whose motoring is not entirely confined to hard roads.

PLAN No. 5. Allover color green. Scarlet or cream is interesting as a striping accent. The soft, mellow characteristic of green is most pleasing and fitting for open car use. Because it is a grayed or weak chroma color, it has dust-concealing merit.

In recent years color has been used more and more on parts of

Depth
of color
with that lustrous pearly tinge—it's
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the car. The body color is now extended to include radiator shells, metal tire covers, wire wheels, fenders and head lamps.

The black fabric top, heretofore left in its original patch-like appearance on the center of the top of the car, is now colored to match the rest of the car.

EDITOR'S NOTE: Supplementing the above, one of our friends submits the following brief item clipped from *Automotive Industries.*

Cheerful Assurance

Autocolor, Spring and Summer, 1933, is the Ditzler contribution to automobile designers. Frank S. Spring of Hudson, a contributor to this issue prophesies that the public will like simple, one-color combinations that harmonize. New colors must be in shades which uplift rather than disturb, the spirit; they must look good even when coated with road dirt. So Ditzler suggests six colors—Cordbeige, Oystershell, Baden Green, Apple Red, Copperust, Matelot Blue—each in four values from No. 1 light to No. 4 dark.

Improved Barrel; Removable Head

In the March number of INDUSTRIAL FINISHING (page 29), I noticed an editorial having reference to a new paint drum that can be easily cleaned, because it has a removable cover at one end. The drum described is doubtless a good one, but when it comes to convenience, I know of one that is even better. Perhaps not so many are aware that steel barrels are now being built with bilged sides, very much like the wood barrel. The bilge forms an arch of strength for the metal barrel just the same as for a wood barrel, and it will not dent or buckle so easily as an unbilged barrel—and in addition it is easier to handle.

Here is the big advantage of the barrel I have noticed: Not only does it have a removable cover at the end; the entire end or head is removable. The upper rim of the barrel curls outwardly to form the flange, making a full and absolutely unobstructed opening when the head is removed. As for closing the barrel, the head is fastened into place with a crescent-shaped hoop of steel, clamped into place with one bolt. Drawing up this one bolt makes the barrel liquid-tight.—L. D. F.

Waterproof Cement

A new, flexible, waterproof cement for sealing cracks at the moulding on automobile tops has just been announced by the du Pont Company. This new product, which is known as No. 7 Top Sealer, is a special type of heavy bodied varnish which dries to a dull black color closely resembling the color of top material on used cars. It flows well, has fine texture and good adhesive qualities, and dries tack free in about 30 minutes after application. It is packed in collapsible tubes equipped with long nasal tips to make application easy.

Air Filter Representative

With the general increase in industrial operations, a noticeable increase in the demand for dry type air filters has been recorded. Manufacturers of air filters are expanding their sales personnel. The latest addition to the Coppus Engineering Corporation of Worcester, Mass., is Smith-Monroe Co., 1910-12 So. Main St., South Bend, Ind., who have been appointed South Bend representatives for the Annis Air Filter, manufactured by Coppus. This representative will specialize in applications of the Annis filter to air compressors and engines. The Annis air filter (dry type) is used extensively for such applications, as well as for air conditioning in industrial plants requiring thoroughly clean air in process work and offices.

SPRAY *finishing* Equipment

Several remarkable improvements have been made in spray equipment and accessories during the past year and you should find out more about them before planning on ordering or reordering anything in this line.

THE APPLICATION of liquid finishing coats by spraying, wherein the force of compressed air is utilized, has become a recognized standard method in practically all manufacturing industries and refinishing shops. The spray lays on a thin coat of finish smoothly, rapidly and uniformly. A tremendous amount of improved apparatus and accessories have been developed.

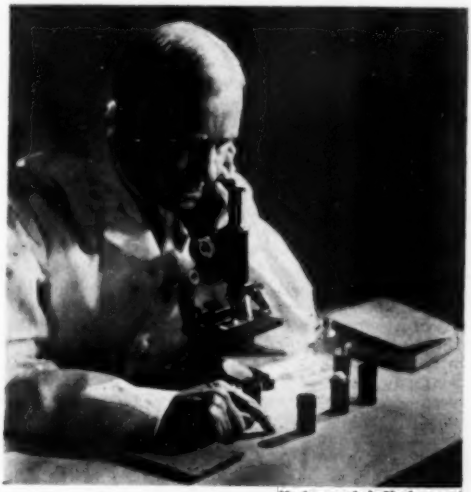
Booths have been redesigned to make them more nearly fireproof, more easily cleaned, better ventilated, better lighted, and more suited in shape, size and appointment to certain standard and many special classes of work. Booth construction in some cases is such that standard sectional units can be quickly and easily assembled or dismantled. Portable booths are also available.

Spray guns have undergone vast improvement, models having been developed for spraying practically every type of finishing material that can be named, and for doing the work under different conditions. Spray equipment manufacturers did not stop with hand guns, but have also developed various types of automatic guns, stationary and movable, with automatic power control.

Spray guns are made in a variety of styles and sizes, ranging from small miniature guns for the studio artists, on through touch-up guns, cup guns, shading guns and regular guns for small refinishers and industrial finishers, up to large guns for work inside and outside of industrial paint departments and finishing rooms. Interchangeable adjustable nozzles, each for a different type of work, add to the usefulness, convenience and versatility of each individual spray gun.

Starting with the air lift and turntable to support articles in the spray booth, manufacturers have gone on and developed a variety of apparatus for handling, supporting, turning and moving products being sprayed, this equipment being semi or full automatic in operation. Conveyors of various types have come into extensive use; and supplementing these and the booths we find drying tunnels

Perhaps your business really IS



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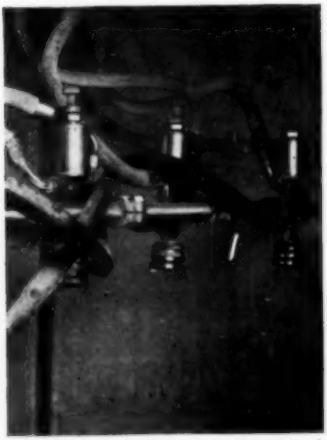
through which the sprayed work passes to dry before being released at convenient unloading stations.

Material containers now have an extensive range in size, style and adaptability; they include small cups attached singly or in multiple to the spray gun, portable containers, containers with air or mechanical agitators, and pressure containers far removed from the spray room but connected to it by pipe lines.

Accessories and auxiliary equipment include air cleaners or strainers for cleaning the compressed air, heaters for heating material and air when this is necessary or desirable, air pressure gauges, air pressure controls, air filters for cleaning air entering the booth, exhaust equipment, devices for catching waste spray material, agitators and strainers for conditioning material, spark-proof and explosion-proof motors for driving ventilating fans, etc.

Spray finishing includes not only the solid covering of plain and intricate surfaces but a variety of decorative work such as shading, clouding, antiquing, stenciling, veiling, speckling or flecking (putting on freckles), spattering, misting, stippling, marbleizing, striping and other novelty effects, as well as the painting of pictures. Spraying is also used for doing patching and touch-up work. With the present highly developed spray equipment, a remarkable degree of control is not only possible but easy. This adds substantially to the versatility of the spray system, making its possibilities almost unlimited in practically every line of painting and finishing.

Complete spray outfits are now available in a wide range of sizes, the smaller ones being inexpensive but constituting complete portable equipment, convenient and economical for the smallest shops in any industry.



Automatically controlled spray guns mounted above a conveyor which carries the sprayed articles through a drying tunnel.

EDITOR'S NOTE: *The following comments on the foregoing article are submitted by B. C. Gardner of The DeVilbiss Co., Toledo, Ohio.*

One addition we might suggest is the remarkable improvement which, during the past year or so, has been made in the construction of fluid hose. We refer, of course, to a fluid hose which has a lining that is practically impervious to the action of the common solvents used in finishing materials. The result is a much longer wearing and a more satisfactory fluid hose than the finishing industry has been accustomed to using. Tremendous economies are being effected as a result of the use of this long-wearing, solvent-resisting fluid hose liner.

Further, in this connection, very important improvements have been made in the connections used on both fluid and air hose. These connections are now more easily applied to and taken off of both fluid and air hose—a very great convenience, particularly to the large finishing rooms where hose is being constantly replaced.

Manufacturers of spray equipment have made remarkable improvements in their products during the last two or three years. Spray equipment will do more and last longer than at any time since the inception of the spray process. We feel that this is a point

well worth stressing, particularly for the guidance of any finisher who contemplates additional equipment. There have been so many changes made in this equipment probably since the last time he purchased, that he is taking a serious chance of missing out on some new improvement if he simply reorders equipment similar to that which he is using.

Our advice to any finisher, before he orders any finishing equipment, is to go to his spray equipment manufacturer for advice and information on the equipment available for the particular job he has to perform. We do not speak of this with any selfish motive, considering the vast improvements made in our equipment during the past two or three years, but we speak for all spray equipment manufacturers whom we know have progressed in the same proportion that we have.

Further comments by A. S. True, Sales Manager of Spraco, Inc. (Engineers — Manufacturers):

At the present moment there is a very active interest in the application of cotton and rayon flock as a finish coating for toys, novelties, and jewelry, together with caskets, glasses and instrument cases and many articles on which plush and silk fabrics have been used as a covering material.

Spraco has developed a complete line of flock spraying equipment including cup guns, pressure feed outfits with separate containers and flock spray booths, special exhausting equipment and collecting systems for salvaging excess flock fom the spraying operations.

In the application of the flock finish the article is first coated with a special adhesive solution, either sprayed or dipped, and while the adhesive is still wet the dry flock is sprayed on the surface, providing the same appearance as a suede finish on leather.

A new pyroxylin primer in light colors dries to touch in 15 minutes, but can be successfully baked at temperatures as high as 300° F.

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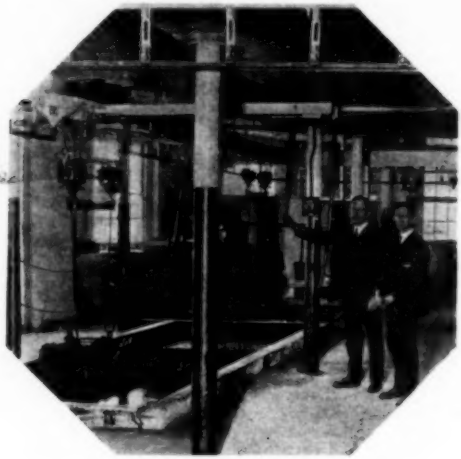

« Dip Finishing »

UNLIKE OTHER methods of applying liquid coatings of finishing material, the dipping process consists of moving the articles to be coated to and from the finishing material which remains stationary in open tanks or containers. The parts to be coated are thrust into the liquid and withdrawn, either by hand or mechanical means. It is obvious, then, that the simplest kind of dipping outfit will necessarily include, 1) a tank, vat or container for holding the liquid material, 2) a set of hooks, clasps or racks for holding the articles being dipped, and 3) an overhead support from which dipped articles can be suspended while drying.

When the dipping is done by hand the rate of withdrawal is so rapid that surplus liquid clings to the dipped parts and continues to drip for some time afterward. Therefore if the freshly dipped articles are to be moved from directly over the dipping tank—to allow more parts to be dipped—an inclined drain board or trough will be needed to catch the drippings and direct them back into the tank.

This constitutes about the simplest type of dipping equipment for hand dipping operations on a small scale. But even with such a modest outfit, a considerable number of parts can be dip-finished in a short period of time.

From this simple and rather crude beginning, some very ingenious and more or less elaborate mechanisms have been developed for performing the work automatically and much more effectively. Several different types of automatic dipping machines have been developed to suit the requirements of products in different industries. Apparatus for automatically lowering, withdrawing, transferring and drying the parts in process are essential features in some of these highly-developed machines. The only duties workmen have to perform is to handle the parts at the

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PURE SHELLAC is the standard of comparison for all other first coaters. Through many years of use, finishers are familiar with its quick drying, fine sanding, transparency, unexcelled sealing, extra good build, and trouble-free application.

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loading and unloading ends of the machines.

In high class dip finishing perhaps the most important feature of the automatic dipping machine is the power equipment for slowly immersing and withdrawing racks of articles being dipped. In these machines the rate of withdrawal is adjustable. On each job it is carefully adjusted to agree with the rate of flow of the finishing material being used. As a result the surplus material flows off completely as each object is slowly lifted upward, leaving no fat edges, sags, bubbles or incomplete drippings.

Automatic Dip Finishing Machine

In one of the several advanced types of automatic dip-finishing apparatus the machine is a self-contained unit, being completely incased in a housing of steel, with wire-glass doors. Exhaust outlets for fumes are provided in the roof of the structure, and thermostatically-controlled fire-smothering apparatus is suitably arranged to take care of the fire hazard.

Features of Mechanism

The mechanism is mounted in and upon a rigid and vibrationless steel frame, and is operated by a vapor-proof induction motor, which drives a variable-speed transmission unit. The transmission unit drives, through suitable devices, a pair of parallel endless chains between which are racks, detachably supported, which carry the parts to be lacquered.

The housing is provided with openings at both ends, one for loading and the other for unloading. The dipping tank is located close to the loading end.

Parts are carried through the lacquer, at a suitable constant speed, for a brief immersion; then they are raised at an angle best adapted to be in accord with the natural flow of the coating material, thereby avoiding any mottled and wavy coating.

Traveling, Drying

The travel of the parts after emergence from the tank is toward the unloading position at the rear end of the machine, the route of travel being a series of upward and downward flights which occupy a time period sufficient to insure thorough drying. This travel period is usually 20 to 30 minutes for air-drying lacquers, but can be changed to suit conditions.

Steam piping is sometimes installed between the travel flights, to intensify the drying process and condition the surrounding air.

When baking is desired, the work-carrying racks are automatically transferred to suitable ovens.

A loading operator at the front end of the machine, and an unloading operator at the rear, constitute the usual crew.

When the number of parts per rack does not exceed 20, and when the parts are easily mountable, the loading is done by the machine operator while the racks pass slowly upward past the front opening in the housing. When each rack carries more than 20 pieces, the loading is done by racking operators, adjacent to the machine, and the loaded racks are delivered to the conveying chains.

When the pieces per rack are greater than can be unloaded during the last downward flight, the racks are taken from the machine, the parts then removed and the racks are delivered to the rackers for reloading.

On a 12 to 15-piece-per-rack basis, the eight-hour output of such a machine approximates 18,000 to 20,000 pieces, with only two workmen.

Obviously, other conditions being equal, an increase in the number of pieces per rack proportionally increases the productive capacity of the machine. Some machines of this type are now treating as many as 10,000 pieces per hour.

The density of the lacquer mixture is another factor governing the rate of output, because the heavier the lacquer the slower must be the speed of travel as the parts emerge from the lacquer, and the longer will be the drying period. The variable-speed mechanism and the adjustment in the angle of emergence are adapted to meet the various requirements.

Mechanical Stripers

DECORATIVE striping, once a slow hand-brush job to be entrusted only to a skilled and often temperamental workman, is now generally performed with one of the several different striping tools which have been developed for this purpose. An inexperienced workman can learn how to use a striping tool within a comparatively short time and, once he gets the knack of it, he can do neat, clean, accurate work very rapidly and economically.

After the operator of the mechanical striper has become experienced in the use of this device, it is estimated that he should, on the average, produce about twice the amount of work (in some cases, five times as much) in a given length of time as compared to the experienced hand striper. In striping certain pieces, for instance, various size wheels, it has been found that the work can be accomplished from 2 to 30 times (depending on size and type) as fast with the mechanical striper as with hand-brush methods.

Rotary Striper

One type of mechanical striper is called the rotary striper. The stripe is rolled on the surface by means of a knurled-face wheel which revolves (by means of contact with the surface being striped) in the color material contained in a metal cylinder. The slot in the color container is adjustable to three different width wheels which produce stripes 1/32, 1/16 and 3/16-in. wide. There is also a screw adjustment for making light, medium or heavy stripes.

An adjustable guide that may be used on either side of the device is provided to gauge the position of the stripe. Four different shapes and sizes of guides are furnished to accommodate various types of surface projections. A thumb trigger starts and stops the flow of striping color.

To produce accurate and uniform stripes it is necessary that the guide be set so the tool may be held in such a position that the face of the striping wheel squarely contacts the surface to be striped. This striper can be used on curves, as it rides the curves perfectly.

The capacity of the color reservoir is sufficient to stripe an average automobile body; however, for production work, an extension elbow is available which greatly increases the capacity of the color container.

Overhead striping can be done if the extension elbow is used. This elbow is adjustable and can be swung into any desired position in less than a second, so that it can be quickly

adjusted and will feed striping color uniformly and perfectly on overhead striping.

Fountain Striper

Another type of mechanical striper is called "a fountain striper." The striping color is deposited on the surface by means of a nib, the action of which is similar to the pen commonly used by draftsmen. Different nibs are used to produce various width stripes. The flow of color is started, controlled and stopped by means of a thumb trigger. A screw adjustment is also used to control the amount of color material fed into the nib.

Two features of this particular tool make it adapted to striping curved surfaces and overhead work. First, a ball-bearing turret head swivels, when released, turning the nib to follow the contour of the oval, round or oblong surface. Secondly, the color cup may be removed and a pressure cup substituted, by means of which the striping color is forced out of the nib irrespective of the position in which the striper is held. Both of these features make this striper especially convenient in striping automobile window frames and reveals, and wherever overhead or underneath striping is desired.

Attached to the revolving turret head is an adjustable guide and wheel. The wheel acts as a rest in the striping operation and is adjusted to accommodate surface conditions. Either the wheel or the swivel guide may be removed, or both may be removed to suit the particular work in hand.

Consistency of Material

Although it is possible to use any liquid color of proper consistency in the above described stripers, it is advisable to use striping lacquer, or other materials manufactured especially for this purpose, to obtain the best results.

The color material should be thoroughly mixed in a separate container and then strained into the reservoir of the striper. The consistency of the material should be about that of average cream, or in other words, so that the material will drip at about the rate of one drop per second. If the color material is too heavy it may cause skipping, and if the material is too thin it will blur or run when it is applied. Successful work depends upon the proper consistency of color material in relation to the adjustments of the particular striping tool used.

Great care must be exercised in running a horizontal stripe across a vertical surface, to prevent sags or runs. This applies especially to wide striping, say ¼-in. and up.

Guiding the Stripe

In most cases there is an edge, moulding, flange or some other projection on the piece to which the striper guide may be set. If no edge is available for the guide to follow, a separate guiding edge may be temporarily fixed on the surface to allow the striper guide to follow.

It is a good plan to keep the striping end of the tool submerged in lacquer thinner (or solvent for the material

The Mechanical Striper For Industrial Plants

Here's the striping tool for industrial use — to apply stripes on furniture, office equipment, refrigerators, toys, turnings, airplanes, automobiles, trucks, etc. Rolls on stripe easier and quicker and at less cost. Easy to adjust and operate — any inexperienced workman can use it.

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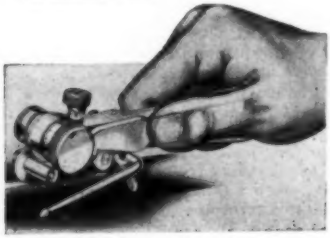

used) when not in use during the day. This prevents drying and caking of the color material on the wheel, nozzle or nib, as the case may be. When putting the striper back into service again, it is best to wipe off the free thinner or other solvent with a rag, so that the first material applied will not be too light in consistency. Each type of striper has a small vent hole in the color reservoir. This vent hole must be open and free at all times if satisfactory work is to be performed.

Cleaning the Striper

At the close of the day's work, the striper should be thoroughly flushed out with lacquer thinner or other solvent, and the color reservoir cleaned before putting the tool away. The thumb trigger and any other moving parts should receive a drop of oil occasionally.

It must be remembered that the mechanical striper, regardless of type, size or manufacture, is a precision tool and it should be handled as such. Pliers for loosening or tightening moving parts, and finishing nails or wire for cleaning color and vent openings are wholly unnecessary, and if used they are likely to damage the striper beyond repair. Intelligent handling and proper cleaning of the striper will eliminate delays and exasperation, as well as render violent corrective measures unnecessary.

Mixers, Stirrers, Agitators

SEVERAL types of mixers, stirrers, or agitators are available for the user of finishing materials to make selections to suit any need or condition. First, there are stirrers fixed right in the steel container, with a hand crank on the outside. Their chief purpose is to loosen up and put back into solution any material that settles to the bottom of the drum or along one side after the drum has remained in storage a long time.

Then there is the air-operated agitator which operates inside the container, keeping the material stirred up so that heavy pigments will remain in suspension while spraying continues.

Another and important type of device which can be used for stirring, agitating or mixing consists of a portable motor-driven propeller shaft which carries a clamp that fits over the edge of the container. This device has two propellers the blades of which are pitched in opposite directions. Mixers of this type are made in several sizes, and each one has an explosion-proof motor so it can be safely used with lacquers and other inflammable finishing materials.

Other mixers wherein the container is also included are sometimes used in finishing departments and laboratories.

Explosion Proof Fans . . . .
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Metallizing Process

A commercially successful and widely used method of spraying molten metal (like spraying paint) to metallize or permanently coat with metal the surfaces of various products, for various decorative, utility and repair purposes

METALLIZING is a highly developed method of spraying molten metal so that it will adhere to practically any solid base. Glass, wood, plaster, cloth, cement, paper, plaster of paris, brick, tile and metal can be coated with metal by this modern method, which, while not actually transmuting one substance into another, does transmute all of the qualities of a certain metal to another substance, as far as surface characteristics are concerned. Furthermore, these metal coatings can be ground, polished, machined, or given any other treatment which the pure metal will take.

The idea of spraying molten metal is not a new one. Inventors and metallurgists have been working on the process for 40 years. Metal spraying is just being brought into its own as a coating process, however, due to the fact that heretofore the unreasonably high cost of the equipment and the more or less uncertain result procured, have rendered the process unsuited to commercial use. The metallizer has overcome these faults, and, in addition, gives a higher coating efficiency, consumes less gas per weight of metal sprayed, and gives a finer coating than any previous unit.

The Metallizer or Sprayer

The metallizing unit, for convenience, may be divided into two parts —the feed mechanism and the gas head, or nozzle. The gun operates wholly on compressed gases—air, oxygen, and either hydrogen or acetylene. The gasses and the air are conducted into the gas head after passing through a main control valve, which regulates all of the gases with one movement.

The two heating gases, oxygen and either hydrogen or acetylene, pass through various metering plates and mixing chambers, and finally emerge as a cone of combustible mixture, which surrounds the metal wire. This latter is being constantly fed into the combustion zone by the wire feed mechanism—which will be explained later. The air also passes through various metering plates in the gas head, and emerges in a cone shaped blast which surrounds the gas cone. Thus, the melting zone consists of a central core of metal wire which is melted by the surrounding cone of burning gases. As each drop of molten metal is formed the air blast strikes it and atomizes the metal into a fine spray, which is driven onto the base material at a speed of approximately 30,000-ft. per minute.

A small portion of the air supplied to the gun does not pass through the gas head, but is diverted through a by-pass valve and serves to run a small air turbine. This turbine operates the feed rolls which pull the wire into the gun through a series of case-hardened worms and gears.

The action is wholly automatic, since the rolls have sufficient power to readily pull the wire from a twelve or fifteen pound spool of metal, and the speed of the turbine can be regulated through varying the amount of air passing through the by-pass valve.

For complete information on the spraying of-

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This newly improved process opens a new field of ideas in industrial finishing, for example—one manufacturer of wood caskets uses this process to give the wood caskets appearance of bronze, copper, etc. and another manufacturer of fireplace sets sprays the andirons, poker, shovel, etc. to secure extremely pleasing effects—and in this case very satisfactory results because the metallized finish on the andirons is not affected by the heat of the fire.

For those not having sufficient amount of work to justify purchasing an outfit there is doubtless a metallizing job shop in your vicinity — write and let us refer you to them.

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The TAYWAL process makes possible the application of thin metal coatings to metal, wood and other surfaces—for protection against corrosion or chemical reaction; for decorative purposes; and for repairing auto body and other metal surface imperfections. It opens up and simplifies a multitude of surface coating operations, including the spraying of preheated liquids. At this moment, many auto repair shops are making profits in the use of this simpler and more effective method of metal body repair. Write us!

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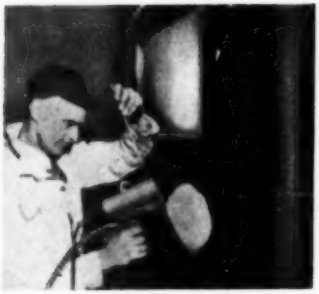

Preparing the Surface

Wood, cloth, plaster of paris, celotex and other such porous base materials require no preliminary preparation providing they are clean and free of oil, grease, pitch, etc. Nonporous articles, such as glass, glazed tile, and metals, require a preliminary blast-cleaning operation before coating. This operation serves the dual purpose of entirely removing all oxides and other impurities from the surface, and of slightly roughening the area to be coated so that the metal particles secure a "foothold" (good adhesion). A good grade of silica sand or steel grit is necessary for this preparation, a 16 to 20 mesh angular sand or an equivalent size of steel grit under pressure of 40 to 80-lbs. per square inch gives the most satisfactory results.

Coating Characteristics

After setting the gas regulators to the proper pressure, the unit is put in operation by opening the unit control valve half way. This allows enough air to pass into the turbine to start the wire feed mechanism, and also permits sufficient gas to pass so that a combustible mixture is discharged at the end of the nozzle. This mixture is then ignited with an ordinary gas lighter and the valve is opened fully. This last operation allows the full amount of gas to flow and also turns on the atomizing air blast, putting the gun in full operation. Manipulation from this point on is much the same as that of an ordinary paint spray gun.

The spray is merely passed back and forth across the surface to be coated, and at each pass a certain thickness of metal is deposited. This thickness depends upon the kind of metal being sprayed, and the rapidity with which the gun is passed over the surface. An average speed of spraying will deposit approximately .003-in of the soft metals—such as lead, tin and cadmium, .002-in. of zinc, .001½-in. of copper, bronze, and the rest of the great range of metals having melting points between 1000°F. and 2000°F. The high melting point metals such as Monel, Stainless Steel,

etc., will deposit at the rate of .001 to .001¼-in. per coat. On flat work an average operator can cover an area of about 120-sq.ft. per hour with the soft metals, and an experienced operator can do even better.

As pointed out above, the spray consists of extremely fine particles of metal traveling at a tremendous velocity. As these small particles strike the blast-cleaned surface they are driven into all the little crevices and irregularities of the base material, as a photomicrograph of the cross section will show, and the mechanical bond secured will run as high as 500-lbs. per square inch. Subsequent heat treatment of the coating will run this bond to as high as 1600-lbs. per square inch. Due to the high heat, the particles are very plastic as they strike, and flatten out upon the surface of the base material, forming a very finely stratified structure. The arrangement of the tiny flattened particles may be likened to the arrangement of the scales of a fish—each little plate interlocking its neighbor, and overlapping the one beneath, and the whole forming an armor plate, which protects and preserves the material beneath.

Metal Being Sprayed	Standard Wire Size	Acetylene Pressure in lbs.	Oxygen Pressure in lbs.	Air Pressure in lbs.	Wire Speed F.P.M.	Thickness in Inches	Lbs. Per Hour
Lead	14 Bir.	15	18	60	17	.003	25
Tin	14 Bir.	15	18	60	18	.0025	17
Zinc	15 B&S	15	18	60	17	.0015	8
Aluminum	16 B&S	15	18	50	12	.0018	1¾
Copper	18 B&S	15	18	50	12	.0015	4
Brass	18 B&S	15	19	50	15	.0015	3½
Phos. Bronze	18 B&S	15	19	50	13	.0015	3½
Nickel Silver	18 B&S	16	16½	60	11	.00155	3½
Monel	18 B&S	15	16½	60	5	.00125	1½
Stainless Steel	18 B&S	15	18	60	7	.001	1¾
High Carbon	18 B&S	15	18	60	7	.001	1¾

Data chart as applied to the standard metallizer (spray gun). A high-speed metallizer takes larger wire, deposits a thicker coating and discharges more pounds of metal per hour than shown in this table. The gas consumption of a standard unit is 15-cu. ft. of acetylene per hour, and 17-cu. ft. of oxygen per hour.

Accessory Equipment

To insure the best results possible with the metallizer it is necessary to have air which is free from oil, moisture, and dirt. For this reason it is recommended that an air filter of sufficient capacity (35-cu.ft. per minute) be placed in the air line at a point as near the metallizer as possible. An even flow of air to the metallizer is also essential, in order that the wire will feed through the gun at a constant rate. Hence an air regulator of the above mentioned capacity, which will insure this constant flow, is recommended. The regulator should be placed at the end of the air line, and the hose attached to it. The air compressor should have a displacement of 120-cu.ft. per minute. This insures sufficient air to operate the sandblast machine efficiently. With this volume of air one can operate the metallizer as well as the sandblast. The most economical and positive sandblast machine to use is the high-pressure type using a ¼-in. nozzle. The ideal machine for production work is one of 1000-lb. capacity, since this saves constant refilling.

Gold plate lacquer for reproducing gold plate, is announced by a lacquer manufacturer.

Book of Hercules

"The Growth of a Modern Hercules" is indicative of the growth of the American chemical industry—a story of industrial achievement.

This book (40 pages 8½x11-in.) commemorates the 20th anniversary of Hercules Powder Co. in business. It tells a story of growth, diversification, research and the development of new products and new processes. The manufacture of raw materials which serve practically every major industry is described!

Burning-in Knives

FOR MAKING minor repairs in finished furniture or fine woodwork, such as patching up dents and scratches, most finishers use stick shellac of a color to suit the job, and apply this with a hot knife, somewhat after the manner of a tinsmith using a soldering iron. The burning-in knife can be heated over a gas flame or in the flame of an alcohol lamp, but since open flames are to be avoided on account of the fire hazard, a number of firms have turned to small electric heaters made especially for this purpose.

The electric heater has an opening into which the knife blade is thrust to be heated. The heating device is simple, safe and economical. One of the latest model electric heaters is described as being "a rust-proof, scale-proof oven mounted on an asbestos base." It has an adjustable handle rest which not only forms a convenient guide and support for the knife, but prevents the wood handle of the knife from being scorched. An extra accessory consists of a wire cage which serves as an effective guard and handy carrier for the heater.

Comments by
C. L. Woelfle of the Star Chemical Co., Inc., 2800 S. Crawford Ave., Chicago, Ill.:

We suggest changing the heading to read: "Repairing Bruises in Finishing Furniture with the Aid of Burning-in-Knives." We note that more emphasis is laid on the stick shellac and knife heaters, but it really does not describe any of the knives.

SPRAY OPERATORS in finishing rooms have found spraying easier since the introduction of a spray gun that gives a flat, oval or round spray without adjusting or changing nozzles—and without interruptions to production or waste of material. The change is made easily and quickly by turning a thumb screw at the back of the gun.

Thermolyzed Tung Oil Patented

The government Patent office has recently issued full process and product patents on a new type of paint material called Thermolyzed Tung Oil . . . which, produced from Raw Tung or Chinawood Oil by the patented process, constitutes a very much improved paint liquid or vehicle. It has remarkable drying and waterproofing qualities . . . and extraordinary ability to stay in the dried paint film instead of shrinking out quickly.

The patents were issued to the O'Brien Varnish Co., of South Bend, Ind., whose chemists invented and perfected Thermolyzed Tung Oil.

The O'Brien Company has used and tested Thermolyzed Tung Oil for over four years, during which time it has demonstrated startling ability to improve the smoothness, washability, and wearing quality of almost any paint, varnish, or enamel. An interesting folder can be had by writing the O'Brien Varnish Co.

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on finished surfaces
Star Stick Shellac — Amalgamators and
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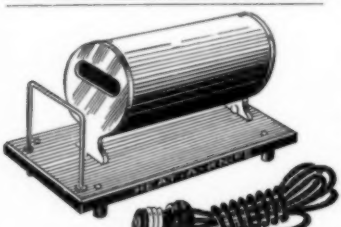

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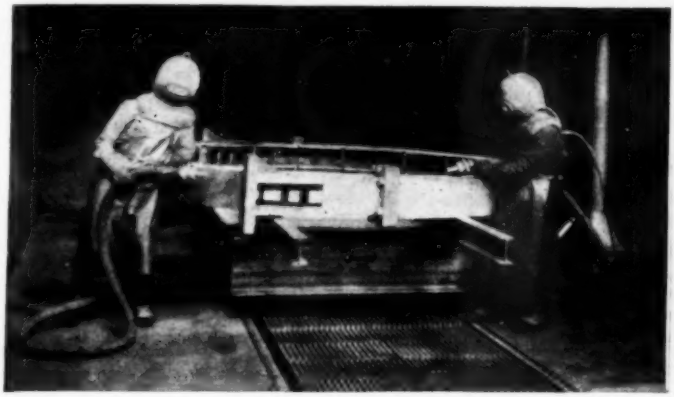
Bobbett Electric Mfg. Co.
4307 Cottage Grove Ave., Chicago, Ill.



« Sand Blasting »

for cleaning, conditioning and decorating metal, wood, glass, marble and granite

AS THE NAME implies, sandblasting or, as it is now called, "blast cleaning," consists of spraying sand—or other abrasive, such as flint, carborundum, particles of steel, etc.—through a nozzle with the force of compressed air. Sandblasting is employed for:

1) Dry cleaning metal surfaces preparatory to finishing.

2) Roughening smoothly polished metal or glass surfaces to produce a mat, satin or frosted effect—or to better prepare certain metal surfaces to receive finish coatings or metal plating, which otherwise might not adhere properly over a long period of time.

3) Smoothing and cleaning the rough surfaces of metal castings.

4) Producing decorative effects, with the aid of stencils, on metal, wood, glass, marble, granite, fiber and other surfaces.

5) Removing old paint or other objectionable film from surfaces.

The results produced by the powerful spray of abrasive depend somewhat upon: 1) the character and condition of the surface before sandblasting begins, 2) the kind and fineness of the abrasive used, 3) the air pressure employed, 4) the manner in which the spray of abrasive is presented to the work, and 5) the degree of thoroughness with which the operation is performed.

The rate of speed required to do sandblasting work depends, of course, upon the material of which the articles are made and the kind of finish required. The pressure of air required must be regulated in accordance with the class of work.

Sandblast outfits range in size from small cabinet models to some which occupy a large room. The nozzle may be stationary, as in many of the small

models, or it may be attached to a hose or movable pipe and arranged to be held or guided by the operator, as in the large booths—see illustration on preceding page.

Various means are employed and still others can be devised for directing the spray of abrasive to the surfaces being treated. In some of the work performed in small sandblast cabinets, the operator stands outside but extends his arm inside the cabinet and holds the article in his gloved hand to present it to the down spray of sand. He can see what is going on through a window in the cabinet. In large booths the operator holds the spray nozzle and directs it to the object being sandblasted, just as in spray finishing. While working he is protected by a mask and suitable clothing.

Sandblasting outfits usually include equipment for re-conditioning the used abrasive, returning it to a supply tank and using it over again repeatedly. Reconditioning the used abrasive is one of the most important functions of a modern blast cleaning equipment. Formerly it was thought quite sufficient to remove, by a simple screening process, any refuse too large to freely pass the nozzle. However, it was found that it is just as important to remove the extremely fine material, such as disintegrated abrasive and dust, both of which greatly reduce the efficiency of the blast. For this reason it is important for the prospective buyer of blast cleaning equipment to make sure the equipment he is about to purchase embodies the most up-to-date method for reconditioning the abrasive.

Because an article is small is no good reason for selecting a small machine—if the article is small and the quantity of work is small, then the smallest outfit might be used, but, first of all, what material is it made of and what is its weight, dimensions, and tonnage required per hour or day? These factors enter into consideration. If the article is small but the quantity large, then even the very largest machine may be the best because of its greater speed of production.

Note by A. L. Gardner, Advertising Manager of the Pangborn Corp. (Blast Cleaning & Dust Collecting Equipment) Hagerstown, Md.:

"The protection of workers from the industrial disease "Silicosis" is most important. Modern air-ventilated helmets play a most important part in this work."

SAND BLASTS

For removing old paint from Automobile Bodies; Removing scale from Iron and Steel
Sand Carving Wood the new process
We also build PAINT SPRAY GUNS,
Pressure Tanks, Air Compressors, etc.

THE MACLEOD CO.

Bogen St. Cincinnati, O.

Plastic Resin Solutions

Beck, Koller & Co., Inc. (Specializing in the Mfr. of Synthetic Resins), 601 Woodward Heights Blvd., Detroit, Mich., says:

"We have recently issued a new booklet on BECKOSOL-Plastic Resin Solutions. . . . . In addition to these plastic resins for industrial finishes, our line also includes BECKACITE, which is the trademark name for our modified phenolic resins of the condensation type. These products are described in separate booklets, sent on request."

New Pearl Essence Manufacturer

Jos. H. Meyer Bros. who formerly marketed their Pearl Essence under the trademark "Richelieu," have disposed of that phase of their business to The Mearl Corporation who will market same under the trademark MEARLMAID. Associated in the new company are Francis Earle, former president of the Oxalite Corporation and Harry Mattin, former treasurer and chemical director of Jos. H. Meyer Bros.

The new company, in addition to operating its plants at Reedville, Va., and Eastport, Maine, will open an additional one in the vicinity of Newark, N. J., and an office and laboratory in New York City. Both at Newark and New York City, technical assistance will be rendered, and research will be carried on to increase and facilitate the use of pearl essence. Until suitable quarters are found, the new company has engaged temporary space at 220-25th St., Brooklyn, New York.

MEARL MAID PEARL ESSENCE

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A BETTER SERVICE
AN EXPERIENCED TECHNICAL STAFF

For the Development of Better
PEARL ESSENCE FINISHES

THE MEARL CORPORATION
220 Twenty-Fifth Street
Brooklyn, N. Y.
HOTEL BELCREST, DETROIT, MICH. 704 Market St., San Francisco

The TAYLOR SYSTEM of COLOR HARMONY

COLOR HARMONY exerts a powerful influence on sales of finished articles—
. . . and the Taylor System of Color Harmony solves the problem of selecting color combinations easily, quickly and always harmoniously. This system is based on fundamental, natural color laws, but is reduced to such simple chart form, that anyone can readily understand and use it—there are no books to read—it's right before you in color.
No waiting. No guessing. You simply select the base color for your scheme and the Taylor Keyboard automatically shows all the colors that harmonize with your base color. *Discords of color cannot appear through the mask.*

Chart "A" of the Taylor Color Harmony Keyboard is 22 x 15 inches and shows 96 different colors. It is accompanied by two black cardboard masks which can be adjusted to show four different tones of each color. Price $5.00.

Practical Publications, Inc.
802 Wulsin Bldg., Indianapolis, Ind.

To Repair Scratches

Being an interested reader of your magazine and deriving benefit from the same, I would appreciate it if you would advise me what your method would be for removing scratches from dull finish on lacquer. This is a rubbed dull finish.—I. B. N. (V. P. & G. M. of J. M. Casket Co.)

The usual method of treating scratches on a finished surface is to fill them with stick shellac applied with a burning-in iron or hot knife, as in soldering. Shellac sticks can be had in colors to match the finish being repaired. You can see the work being done in the repair shop of any large retail furniture store and in refinishing shops and factories of various kinds.

The workman simply runs off a little melted shellac with the hot knife, directing it into the crack or damaged place as a solderer would do, and then presses it into place with the knife as it begins to cool. As it cools he flattens the shellac practically flush with the surrounding surface. Later he rubs the patched place down to a final finish so that it matches the surrounding surface so well it cannot easily be detected.—I. F.

Using Rotator to Match Colors

I HAVE read Mr. Howard Ketcham's article on Color Matching (Jan., pages 14-18; Feb., pages 24-27) and have made an attempt to construct a machine as per his illustration, but I cannot get the colors to blend. Would it be possible for you to pass this letter on to Mr. Ketcham, then perhaps he could write me direct and give me the information I require.

I have colored a number of discs with lacquer colors such as yellow, red, blue, light and dark green, yellow and white. When I wished to get the proportions of color to make light green I arranged my discs, such as 75% white and equal parts of blue and yellow, to get what I believed would give me a light green. When I set the machine in motion the result was a dirty light gray.

Is there a certain speed for the Rotator to travel? Should the colors be flat, or should dry colors be ground with a special vehicle? I thought when I read your article that I would be able to save time by using your idea, instead of adding tinting colors a little at a time until the desired color was obtained.—F. C. P.

Your letter about color matching was forwarded to me by the editor. I am glad to know of your interest in the type of color work discussed in the article you referred to.

In conducting the experiment suggested by the article, you obviously did not use measured colors. By measured, or calibrated, colors, I have in mind variations of color that have associative significance.

Our Calibrated Duco Colors are visually measured and are available in every full strength Hue in all possible attributes of Value and Chroma. These color terms, Hue

Questions «Answers

Value and Chroma are all explained in the article you refer to.

As explained in the article: "When two complementary colors, properly balanced as regards Value and Chroma are rotated, a perfect Neutral Grey is produced." If you are interested in securing properly measured discs with which to standardize your paint colors, the Munsell Color Co., 10 E. Franklin St., Baltimore, Md., is in a position to supply you with anything you need in this connection. From this concern you will be able to purchase discs of properly measured colors. For example, they can sell you a Blue at five Value and five Chroma (Blue 5/5) and a Yellow Red at five Value and five Chroma (Yellow Red 5/5) which when spun on your rotator in 50-50 areas will resolve into a perfect Neutral at five Value. It will probably be interesting to you to know that a disc of Red at five Value and five Chroma and a disc of Yellow at five Value and five Chroma can be used in place of Yellow Red to produce the same balanced effect on the rotator.—HOWARD KETCHAM.

Lint on Finish

We have been experiencing some difficulty with our lacquer finish on metal caskets, therefore we are writing you for information. What is the best temperature to keep the spray room? We have recently built a new spray room which is clean and free from dust; however, we are experiencing trouble with lint on the finish. We would like to know if there is a possibility of this lint coming through the lacquer or bronze powder? In cleaning the lacquer containers or the stem of the gun we use ordinary wiping rags. Is there a possibility that the lint would come from this? If so, what other method would one use to clean the gun and containers? Any information along this line would be greatly appreciated.—E. C. Co. (Mfrs. of Caskets)

A suitable temperature for your spray room is anywhere from 72° to 80°F.

In reference to the presence of dust or lint on the surfaces of caskets you're about to finish, we suggest that your finisher prepare a tack rag and carefully wipe the surfaces just before he applies the finish. If he is an experienced finisher he will know how to make a varnish tack rag; if not, please advise us and we will send directions for same.

There is a possibility that lint from the raw edges of your wiping rags causes some of the trouble you complain about. The only way we know of avoiding this is

SYNTHETIC ENAMELS
Give that porcelain like finish
We Invite Inquiry
DENNY, HILBORN & ROSENBACH
INCORPORATED
230-34 No. 12th St. Philadelphia, Pa.

WOOD FINISHERS
WILL find our "HRT" and "CJT" rubbing tow and filler wiper products superior and more economical than other materials—durable, non-scratching, and full body for quick cutting and removal of filler after sufficient working in. Less expensive; operating time saver. Packed in bales to insure cleanliness in shops. Write us for samples and prices.
Oscar Smith & Sons Co.
Clearfield and C Sts. Philadelphia, Pa.

to hem the edges of the rags. Instead of using rags, you might use cheesecloth, but this would probably be a little more expensive.—I. F.

Zinc Die Castings

We manufacture items using zinc alloy die castings, and would like to give the metal a black or brown finish by a chemical process—not lacquer coated or enameled. —D. D. Co.

Three formulas suggested for producing a black color on zinc die castings are as follows:

Formula No. 1

Copper Sulphate.....125 grams
Potassium Chlorate.....60 grams
Water .....1 liter*
*A full quart—to be exact 1.0567 quarts.

This solution should be heated to about 150° or 160° F., and the hot solution should be brushed on the castings.

Formula No. 2

Copper Sulphate.....100 grams
Nickel Ammonium Sulphate 100 grams
Potassium Chlorate.....100 grams
Water .....7 liters

This solution is to be applied by immersion (dipping).

Formula No. 3

Antimony Chloride.....90 grams
Alcohol .....800 grams
Hydrochloric Acid.....60 grams

This solution is applied by immersion (dipping), pulled out and wiped with a dry cloth, then immersed again, withdrawn and wiped with linseed oil.

Solutions for producing a brown color are as follows:

Formula A

Copper Nitrate.....200 grams
Water.....1 liter

Use this at 65° F., and apply the liquid by immersion.

Formula B

Copper Sulphate.....38 grams
Sodium Carbonate.....400 grams
Ordinary Sugar.....56 grams
Water.....1 liter

Note: Sodium Carbonate comes in several grades, but the grade to use in this solution is what is designated as having ten molecules of water.

This solution is to be painted on and allowed to dry: then the castings are brushed with a dry brush to remove excess and non-adhering material. After this treatment warm the castings to about 130°F., or slightly higher.—I. F.

Coating Materials Laboratories

"We are pleased to announce that the constant increase in the volume of our business has necessitated our obtaining larger quarters; and are therefore now located at 100-02 Avenue D, Brooklyn, New York; Phone, SKidmore 4-1800.

"The improved facilities which we now possess, together with larger quarters, places us in an advantageous position to furnish you with the same high grade lacquers and enamels, which have met your requirements in the past.

"It is a pleasure to express our thanks for your support and cooperation."—H. A. DePhillips, Pres., Coating Materials Laboratories, Inc.

VARSEAL
THE LATEST THING IN SEALERS
Equally Satisfactory Under Varnish or Lacquer
A Distinct Saving Over Shellac
THE GILBERT SPRUANCE CO.
Richmond and Tioga Sts. Philadelphia

What's New « «

Whirling Machine

An announcement from the Laundryette Division of the Apex Electrical Mfg. Co., Cleveland, Ohio:

"Many industrial firms have found ways of adapting the centrifugal extractor (see illustration), for instance, for degreasing radio tube bases and other small delicate parts; painting or coating metal parts by immersion with uniform extraction; paraffining milk bottle tops. . . .

"In operation, the lower half of the container is filled with solution into which the article is going to be immersed, the extractor basket is filled and lowered by mechanical means into such fluid and then lifted above the solution and whirled to extract excess solution. The extraction speed is variable from 400 to 600-r.p.m.

Used for finishing small articles

"Coating or extracting is uniform and accomplished in about five minutes.

"Additional extractor baskets can be obtained so that they can be filled with parts originating in different parts of the plant, taken to the machine and exchanged for the basketful of completed articles, in that way eliminating handling.

"The cover is supplied with a lock for controlling fumes, and splashing, and has a light and a port hole so the operator can see what is going on inside."

DeVilbiss Spray Gun

The DeVilbiss Co., Toledo, Ohio, calls attention to many exclusive features in the improved Type MB spray gun. A new trigger gives "Feather Touch" control, insuring perfect balance and effortless operation. Hand strain and "finger corns" are eliminated. A light touch keeps the gun in action. There is a shorter trigger movement; consequently, it is not necessary to stretch for the trigger.

The type MB gun owes its ease of operation to an air piston, which relieves the spring tension on the fluid needle when the air valve is open. This permits the use of strong spring pressure to close the needle—yet trigger pull need be only strong enough to open the air valve. Trigger pull does not compress the strong needle seating spring; air pressure does it automatically, without any effort on the part of the operator.

Unrestricted air passage on this gun allows a greater volume of air in the head and as a result, atomization at a lower air pressure. Air is distributed evenly in the cap, eliminating excess fumes and thereby decreasing material costs. In addition, since it demands less air pressure, a smoother, more even finish is obtained than has been heretofore possible.

The Type MB gun has the improved ball and cone principle, an exclusive DeVilbiss feature, which assures

proper concentricity of the fluid tip and the air cap, as well as protecting the surfaces of contact against wear. It automatically maintains perfect spacing and alignment of nozzle parts, hence guarantees uniformly finished surfaces. The graduated spray width adjustment has been perfected through the addition of

larger air passages in port openings; so that a greater volume of air is available at the point where the spraying is done. Clearly indicated graduations allow the operator to control the width and character of the spray easily and positively. The removable spray head has been simplified; it makes cleaning an easy and quick operation, facilitates a quick change from one material to another, prevents misalignment of fluid needle and tip, and uneven wear at the end of the needle. The body of this gun is a heat-treated aluminum alloy forging, which combines the tensile strength of steel with the lightness of aluminum. The spray head barrel is supplied either in brass or aluminum.

One-Coat Metal Finish

A new fast-drying pyroxylin enamel for use as a one-coat finish on bare metal has been developed in laboratories of E. I. du Pont de Nemours & Co., Wilmington, Del. It is known as Pyralux and is available in 36 standard colors.

Pyralux is a low-cost finish, attractive and durable; gives a high gloss finish to any bare metal surface without the use of a primer; has excellent adhesive properties, and shows marked initial and retained flexibility; dries dust-free in 15 minutes, is dry enough to handle in one hour and is ready to pack in seven hours.

Humidity Fittings

Humidity Headquarters, 1929 E. 55th St., Cleveland, Ohio, announces three new devices or fittings for use in connection with compressed air, spray painting or air conditioning installations. They include:

1) "Kwiklok" designed to clamp over a drilled hole in a humidity pipe and produce a mist spray.

2) "Kwikturn" a shut-off valve made to connect to standard humidifier tubing ¼-in. outside diameter. Without packing, "Kwikturn" is water tight and gas tight. Fluid passage through the valve is straight and smooth, discouraging any deposit of dirt or scale.

3) Kwikleen is a device for the complete protection of small fluid valves and orifices.

Metallizing Book Free

The Metallizing Co. of America, Inc., 1218 Long Beach Ave., Los Angeles, Calif., has spent some months preparing an exceptionally fine 20-page booklet covering the Metallizing Process, its applications, advantages, and accessory equipment. (Page size of booklet, 8½x11½-in.). This is the first booklet ever published covering the process fully, and the applications cover each field, listing objects coated, type of metal used, and purpose of coating. The booklet has over 50 halftone cuts showing different types of work that have been done by various users.

The Metallizing Process developed by this firm has gained great headway during the last 18 months, and this booklet covers in brief their experience over many years. This booklet is sent free to those who mention this publication and write on their business stationery.

Testing Materials, Finishes

USERS of finishing materials often desire to make tests of the materials they purchase and, in many cases, they also want to make one or more tests to predetermine certain information about the finish coatings which have been applied. For example, a buyer or user of materials may want to make tests to determine the viscocity, specific gravity, solid content, volatile content, opacity, covering capacity; or he may want to learn whether or not the material contains certain desirable or undesirable ingredients.

It isn't a matter of chemical analysis to satisfy curiosity, or to discover possible trade secrets; these tests are made for the purpose of finding out specific facts which can be used effectively to make more intelligent and accurate comparisons of one material with another—especially when the buyer is being urged to discontinue using one material in favor of another—and to be in better position to determine whether or not the material will produce the desired results.

After finish coatings are applied many more kinds of tests come to mind; for example, tests to find out accurate data on the adhesion, speed of drying and permanence of color; the flexibility, hardness and thickness of the film; the resistance to alcoholic beverages, chemical solutions, abrasion, and exposure to various materials, conditions and elements indoors and out of doors, in the air, under water, under ground, etc.

Instruments and apparatus have been developed and are now in service and on the market for making all of these tests and many more. Most of the tests can be made easily, quickly and economically by the foreman finisher or someone else in the organization. A laboratory and a laboratory expert are not required.

Probably the most elaborate and expensive of all finish testing devices is one which will reproduce artificially, and in a period of a few hours or days, what is equivalent to several years of service in any specified cycle of natural weathering or unnatural exposure conditions. This machine can be adjusted to reproduce and intensify all kinds of severe weather—exposing test panels to sunshine, rain, wind, snow, frost, sleet or any other conditions which may be encountered in actual service. While this particular piece of apparatus is out of the question for the small user of finishing materials, it should be in every testing laboratory where much work of this kind is called for—and it is to such places that the small user can send his test panels for making this kind of test. Most of the other tests he can make in his own establishment, as the apparatus is neither expensive nor complicated.

All finish users will do well to at least become familiar with the various testing devices now on the market, so that if purchases are not made immediately, the information as to what is available, what it costs, where it can be obtained and how to use it, will be on hand for reference at a moment's notice. The use of testing apparatus to provide accurate information about finishing materials and their performance, before large

Strictly Comparative Testing

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Trade Mark Registered U. S. Pat. Off.
Patent applied for

Standard Drying-time Meter

Automatic — Accurate
5 Minutes to 24 hours

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Patent applied for

Standard Film Maker

.0005" — .002" — .003" thick

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One Coat Enamel
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Can be sprayed, dipped or coated — Air dried or baked.
Supplied in all colors.
Send for 5 gallon can at drum prices.

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A perfect Sealer — efficient and economical.
Can be sanded 20 minutes after application.

Manufactured exclusively by
ROWE PAINT CO.
43-42 Tenth Street
Long Island City, N. Y.
Our Finishing Engineers Are At Your Service

PERMACEL
JONFLEX
INDUSTRIAL

A REVOLITE MASKING TAPE TO FILL EVERY INDUSTRIAL REQUIREMENT

the **REVOLITE** CORPORATION
A subsidiary of
JOHNSON & JOHNSON
New Brunswick, N. J.

quantities of materials are purchased and used, will often be the means of avoiding serious losses in time, material and customer goodwill. These tests will save a lot of costly experimenting.

Strain Finishing Liquids

WHETHER OR NOT a finishing material should be strained by the user before he uses it, depends upon conditions which are too numerous and involved to deal with in this brief article. After all, in the final analysis, one can only conclude that "if the material needs straining, strain it." Some experienced finishers declare that if more users would strain their finishing materials they probably would have less complaints to make about the materials they are using.

One type of strainer for straining small batches of material at a time comes folded up and packaged 100 to the box. When opened up and hung from hooks, it reminds you of an open pocket with a pointed bottom. These strainers are low priced enough to be used only once or twice and then thrown away—like paper drinking cups. They come in two different meshes, one suitable for clear lacquers and varnishes, and the other for pigment finishes, such as paints and enamels.

Non-tearing Mask Tape

IT IS a nuisance to have masking or dividing tape tear while it is being applied or removed, especially when the workman is in a hurry. A non-tearing tape, therefore, would naturally be expected to receive a welcome among finishers in general, and such has proven to be the case. In one tape that has come to my attention, the non-tear feature is obtained simply by using a good quality of closely-woven muslin. It requires no heating or moistening, goes on

easily, stays where it is put, and comes off cleanly—and it can be used again.—H. B. C.

Letters from I. F. Readers

(Continued from page 6)

number in production. We have tried masking tape and silk screen and find that these methods are too expensive. The stripes are too wide for a pencil striper.

We have considered using a glycerine gelatine transfer roll. Can you give us the name of the manufacturer of this material and all the information you may have available on this subject? We have also tried a steel stencil, but find that we are unable to obtain a flat enough edge to eliminate irregular stripes.—F. W. T.

Lacquer Glue

We would appreciate your sending us the name of some manufacturers who can furnish us with lacquer glue.—P. D. Q. Bait Co.

Furniture Novelties

Can you furnish us with names of companies manufacturing furniture novelties?

Our company, although not a year old is doing a good business. We are in the market for one large line or several small ones to job in Iowa and Nebraska. We have the space and a sales organization to handle added lines to a good advantage. Your information will be appreciated.—D. M. Co. (Mfrs. of Furniture Specialties.)

Rustproofing Cast Iron

Can you give me any information on the latest method of rustproofing iron castings before applying black baking enamel or japan? The castings must be made as nearly immune from rust as possible to insure protection from salt air and in tropical countries.—P. J. V. (Foreman Finisher.)

Machine to Coat Strips

The writer is very anxious to obtain from you, for one of our good customers, some data relative to the possibility of running some thin wood strips about 5-ft. long through a roller, coating them with one coat of paint on one side only. A strip is attached showing the thickness of the wood and the width of it. Our customer wants to know where he can obtain a coating machine and would also appreciate any available data you may have relative to finishing one side of these strips.—W. Q. I. (Industrial Division of A. Paint & Varnish Wks.)

Graining Machines

No. 1—We are interested in the graining machine referred to on page 5 of your INDUSTRIAL FINISHING magazine, May issue. We would write direct to the D. G. Co., but do not have their address, and would therefore appreciate your forwarding this letter to the company who has this graining machine to offer so that they may forward us information about the machine, as well as give us lowest quotations.—S. T. Co. (Wall Board.)

No. 2—I am interested in obtaining information about a mechanical graining outfit for reproducing a straight mahogany grain.—G. C. (Foreman of Large Shipbuilding Corporation on East Coast.)

Barrett Whirling Machine

No. 1—We are interested in the Barrett whirling machine which is displayed on page 11 of the March issue of INDUSTRIAL FINISHING magazine. Will you kindly advise us who manufactures this machine? We would appreciate your immediate attention to this request.—T. M. C. Co., (Paintmakers-Varnishmakers).

No. 2—In your March issue on page 11 you describe a machine made by Messrs. Barrett for the enamelling of small articles by whirling. We shall be pleased if you will give us the manufacturer's address. To save time perhaps you would ask the manufacturer to send on to us full particulars and prices, as probably we could place a lot of these machines with various of our customers who are always interested in new methods of handling work.—R. C. Ltd. (Makers of Quality Cellulose Finishes) Black Lake, England.

Editor's Note: Next month's issue will be devoted chiefly to new and unusual decorative finishes—the materials, processes and results.

Industrial Finishing
MAGAZINE

Distributed to Executives and Foremen Finishers in industrial plants where finishing coats are applied with finishing equipment

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EDITORIAL

Equipment Number

This issue of INDUSTRIAL FINISHING is dedicated chiefly to the equipment end of finishing—a vitally important factor wherever finishing enters into the work picture. Even the finish patcher in the back corner of a retail furniture store uses equipment as well as materials, and it is important that it be suitable for his purpose, economical for the company, and safe for all concerned. So it is all up through the varied range of finishing and refinishing establishments, up to and including the largest industrial operations in the world.

Equipment must be suitable, economical and *safe*; these requirements are always essential, but when activity is increasing, as it now is, another element enters into the picture—competition. The performance of the equipment must at least compare favorably with that of ones competitors.

Many remarkable developments have occurred in certain finishing equipment, and it is to the interest of every user or prospective user to at least have a fair knowledge of what is available in the new items. It costs almost nothing to keep informed, but if one has any responsibility it is very costly to not be informed. Alert executives in every industry that includes finishing operations read INDUSTRIAL FINISHING and keep back copies on file for reference. If they don't see what they want they write to the publication or its advertisers for information.

Be Prepared; Act Quickly

In a period of national readjustment, rehabilitation and recovery —with new laws, regulations and personnel smashing precedents and upsetting traditions, things move swiftly. New setups, new conditions and new trends appear with startling suddenness. Everyone in business (especially those in the manufacturing business where the element of time enters into the picture for developing, producing and merchandising the goods) must be prepared to act on short notice—if activity and profits are expected, or to put it negatively, if inactivity and financial losses are to be avoided while others are enjoying prosperity.

Being prepared to act quickly and wisely depends upon being continuously well informed and well equipped. And speaking of equipment, much of it has worn out or become obsolete during the past two or three or four years. To use what's out of date and to

know of nothing better is a serious handicap. Slowness to realize the true trend and slowness to act has cost many concerns their business during the past few years. There's a decided trend now, but what good is an upturn to either the individual or the firm that will make no plans and lay no groundwork to take advantage of it promptly? It is now high time to tool up for activity in some one of the several promising lines.

Fire Hazards, Rates, Regulations

Get on friendly terms with a well informed rating expert and have him go over your equipment with you. You'll be surprised at the opportunities you have to get a lower fire insurance rate—and incidently remove much of the danger of your establishment going up in smoke. Finishing departments and paint rooms will rate low as fire risks if they're properly equipped to comply with fire underwriters' standard regulations. Ordinarily they carry a very high rate, as does everything else adjoining them, simply because some unnecessarily hazardous conditions are allowed to exist. It's surprising how little it costs to make them A-1 risks and how much can be saved in insurance premiums by doing so.

One of the most costly mistakes a factory executive can make is to be antagonistic to a properly accredited, well informed, fire insurance representative. It is far more profitable to show the gentleman every courtesy—even entertain him royally—and then spend plenty of time going through the plant with him to find out first hand all the suggestions and recommendations he can think of to reduce your insurance rate. He can give you many valuable pointers, not only about the risk end of it but perhaps about some phases of your production.

The next step is to make the changes recommended, and finally, see that strict orders are issued and enforced in reference to all safe practices which will assist in earning the lower insurance rate. After all, if you act upon the suggestions, it's like putting so much money out on interest; its earning power goes on and on continuously year after year.

Classified Advertising

Advertisements under this heading 45 cents a line per insertion, minimum charge, $1.35. In estimating, calculate six words to one line, and add one additional line for heading. Use this department to obtain help, find positions, buy and sell equipment, dispose of manufacturing properties, etc.

POSITION WANTED

By foreman finisher, experienced in all kinds of finishes on WOODS and METALS, air drying and baking; handle any number of men; latest methods of production. Chemical experience of materials. Best references to Character, Mechanical, Executive abilities. Salary open. Address IF-478, care Industrial Finishing.

FOREMAN FINISHER

Of 20 years' experience desires position. Know how to handle men and obtain production at lowest cost. Best of references. Address IF-477, care Industrial Finishing.

FINISHING FOREMAN

Desires position. Several years with prominent firms. Store, office, bank fixtures, antique and novelty furniture. Can match any color and finish. Understands modern methods, equipment and production. Can handle any number of men. Salary and location no object. Address IF-472, care Industrial Finishing.

POSITION DESIRED

As finishing foreman by young man experienced on metal furniture, store shelving. Can match colors, spray, machine grain. 5½ years with leading concern. Address IF-480, care Industrial Finishing.

DISTRICT SALES MANAGER

Well-known manufacturer of industrial finishes desires salesman of executive ability to sell and to supervise salesmen. Must be well versed in the industry, having had selling experience, and established trade. State experience and references. Address IF-473, care Industrial Finishing.

INDUSTRIAL SALESMEN WANTED

Throughout United States with established accounts, to represent expanding firm manufacturing lacquer, varnish, enamel, etc. Extremely liberal straight commission basis on high quality, low priced materials. Advise experience, references, territory covered, etc. U. S. LACQUER & CHEMICAL CO., St. Louis, Mo.

INDUSTRIAL SALESMAN WANTED

Old established manufacturer of varnish, lacquer, stains, filler, desires representative, straight commission, in following districts (1) southern Indiana, Kentucky, West Virginia, (2) Fort Smith, Ark. and Missouri, (3) Wisconsin and Michigan. Practical knowledge of finishing materials and acquaintance among furniture manufacturers necessary. Address IF-475, care Industrial Finishing.

SEVERAL EXPERIENCED INDUSTRIAL SALESMEN WANTED

To represent an aggressive Midwest manufacturer of lacquers and synthetic finishes. Exclusive territorial protection. Address IF-476, care Industrial Finishing.

WILL REPRESENT!

An established wood finishing supply house is desirous of representing a manufacturer of lacquers and lacquer enamels in the middle western states. Address IF-479, care Industrial Finishing.

SALESMAN WANTED

Well organized small company in New Jersey, manufacturing a complete line of lacquer finishing materials, desires representation in upper N. Y. state, New Jersey and Pennsylvania. Straight commission basis, close co-operation and quick service assured. Address IF-474, care Industrial Finishing.

SALES MANAGER WANTED

A nationally known well-established paint and varnish manufacturer has an opening for a sales manager (with merchandising experience) for their Trade Sales Division, with Headquarters in New York City. An ideal opening for a man with actual sales experience in this field who is employed as an assistant Sales Manager at present.

In replying, please state age, experience, reference and salary desired. Replies will be treated in the strictest confidence. Our men have been advised of this advertisement. Address IF-481, care Industrial Finishing.

MASTER PAINT SPRAYERS

$100 industrial sprayers, ⅓ regular price. Sprays all materials, lacquer, paints, calcimine. Spray guns. Fully guaranteed. Literature supplied. BURNING BRAND CO., 1812 S. Ogden, Chicago.

MARVELOUS NEW PAINT SPRAY GUN

Requires no air regulator, handles all types paint, lacquer, etc. Lighter in weight, widest spray, perfect atomization; also air purifiers, 5 and 10 gal. pressure outfits, accessories, etc. Write for Catalog and prices. THE ALEXANDER MILBURN CO., 1416-18 W. Baltimore St., Baltimore, Md.

FOR SALE

Compressors Elec. Motors
Rubbing Machines
Spray Guns and Equipment **USED** Woodworking Machines
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